You are on call for a Suburban Hospital ED on a Saturday night. Your registrar calls you at 4am for advice regarding a 48 year old woman weighing approximately 70kg, who has taken an intentional over dose of 20gms of caffeine tablets 2 hours prior to presentation.

Patient is in RESUS with full physiological monitoring attached.

She was been found by the paramedics on the roadside in a car and has been brought to ED.

Her current obs are:

HR: between 105-200,
SBP: between 70mmHg to 110mmHg
Temp: 34 degrees
SpO2: 92% on RA
GCS - E1, V2, M4 - 7
Pupils: BERL 5MM

1) What is your risk assessment of this patient? (4 marks)
- > 100 mg/kg = severe toxicity
- > 150 mg/kg = life-threatening toxicity
- Onset usually within 2-4 hours
- Patient already has all the features of life threatening toxicity

2) List 3 investigations you would like your registrar to prioritise and give reasons for each. (6 marks)

- **ECG** - to determine if patient is in a malignant rhythm, will determine further treatment
- **BSL** - to seek and treat reversible cause of hypoglycaemia as a cause of altered sensorium
- **VBG** - will help detect and correct potential life-threatening hypokalaemia & pH abnormalities

ECG & VBG are given below:

pH = 7.51
pCO2 = 20
pO2 = 54
Na = 140
K = 2.6
Cl = 110
Glu = 13.3
Bic = 16
Lactate 4.6

ECG - SVT

3) While you are driving on the way to hospital, the registrar calls you again and reads out the gas and ECG and states that patient has started vomiting, is now hypotensive. What advice will you give registrar regarding the management? (8 marks)

- Patient needs her airway to be secured urgently - He

should call anaesthetic/ICU registrar for help, intubate patient and admit to ICU
- Treat ventricular dysrhythmias with IV Metoprolol in 1 mg aliquot to maintain a HR <110, while preparing for Esmolol Infusion
- Supplemental Metaraminol 0.5mg IV if required Bolus to maintain a SBP >90mmHg
- Urgent gastric decontamination with activated charcoal 50g via NG tube
- Replace K with caution as its due to intra cellular shift not due to actual loss, aim 2.8-3.3 mmol/L
- Warm patient with external warmers like bair hugger up till a temp of 36 degrees
- Treat seizures with IV Diazepam 5mg every 5 min if needed till cessation of seizure
- To consider haemodialysis if seizure or ventricular dysrhythmias are refractory to other treatments

Discussion:

Foodstandards.gov.au -

Daily caffeine recommended dose 18+ = 400mg/day all sources & 200mg in a single serving

One cup of coffee ~ 100mg
One cup of black tea ~ 50mg
375ml can of Cola ~ 37mg
250ml Energy drink ~ 80mg
50gm Milk chocolate ~ 10mg

Commonly available:
No-Doz Plus ~100mg
Paracetamol 500mg + Caffeine 65mg tablets
200mg tablets from health shops

Toxicity / Risk Assessment
Severe toxicity is unusual unless massive ingestion > 30 mg/kg = mild/moderate toxicity
> 100 mg/kg = severe toxicity
> 150 mg/kg = life-threatening toxicity
Onset usually within 2-4 hours
Duration up to 24-36 hours

Commonly available:
No-Doz Plus ~100mg
Paracetamol 500mg + Caffeine 65mg tablets
200mg tablets from health shops

Effects multiple systems

Clinical features:
Toxicity is due to catecholamine excess:
GI - nausea, vomiting (can be protracted)
CVS - tachycardia, hypotension, arrhythmias
CNS - tremor, agitation, 'jittery', seizures
Metabolic – ↓K+, rhabdomyolysis, respiratory alkalosis (hyperventilation), metabolic acidosis (lactate), high BSL